9 December 2019

Ms. Leslie A. Howard, Remedial Project Manager, HPNS
Base Realignment and Closure Program Management Office, West
33000 Nixie Way, Bldg. 50
San Diego, California 92147

Subject: Monthly Landfill Gas Monitoring Letter Report for November 2019
Post-Removal Action, Parcel E-2 Industrial Landfill
Hunters Point Naval Shipyard, San Francisco, California

Dear Ms. Howard,

The monthly landfill gas monitoring event at Parcel E-2 was performed on Tuesday, November 19, 2019. Monitoring was performed using a GEM-2000 landfill gas analyzer and a photo-ionization detector at gas monitoring probe locations GMP08A, GMP23 and GMP24. GMP08A is located along the fence line (east side) of the perimeter of the landfill while GMP23 and GMP24 are located within the UCSF compound as shown on Figure 1.

The results for the routine monthly monitoring event were as follows:

Methane

- Methane was detected by the field monitoring equipment in gas samples extracted from GMP23 and GMP24 at 0.4%, and 0.3% by volume in air, respectively.
- Methane was not detected in the gas sample from GMP08A.

Per the project's Final Interim Landfill Gas Monitoring and Control Plan[1], the methane action levels are as follows:

- The HPNS action level for GMPs along the fence line, in the UCSF compound, and along Crisp Ave. is 2.5% by volume in air.
- The regulatory action level for the concentration of methane gas migrating from the landfill must not exceed 5% by volume in air at the property boundary or an alternative boundary approved in accordance with 27 CCR §20925.

Since all methane readings were below the action levels during this monitoring period, no further action is required.

[1] Tetra Tech, 2004. Final Interim Landfill Gas Monitoring and Control Plan, Parcel E, Industrial Landfill, Hunters Point Shipyard, San Francisco, California. August 13.

NMOCs

- NMOCs were not detected by the field monitoring equipment in GMP08A, GMP23, and GMP24. The readings at all locations were 0.0 ppmv

Per the project's Final Interim Landfill Gas Monitoring and Control Plan (Tetra Tech, 2004), the NMOC action level at these locations is as follows:

- 500 ppmv in GMPs

Since all NMOC readings were below the action level during this monitoring period, no further action is required.

Monitoring-Related Notes

- The GEM-2000 landfill gas analyzer was checked for calibration before and after this monitoring event

The above monitoring information will be included in the Quarterly Report for the fourth quarter of calendar year 2019, to be prepared in January 2020.

The field data (Table 1) and a map showing monitoring point locations for this project (Figure 1) are included in this report. Please let me know if you have comments or questions about this monitoring event or the data included herein. You can reach me at (310) 569-3575 or by e-mail at howard.inya@gmail.com.

Sincerely,

Howard Wittenberg
Inya Inc., Project Manager

Enclosures: Table 1. Landfill Gas Monitoring Log
Figure 1 Site Map and Landfill Gas Monitoring Locations

Table 1. Landfill Gas Monitoring Log

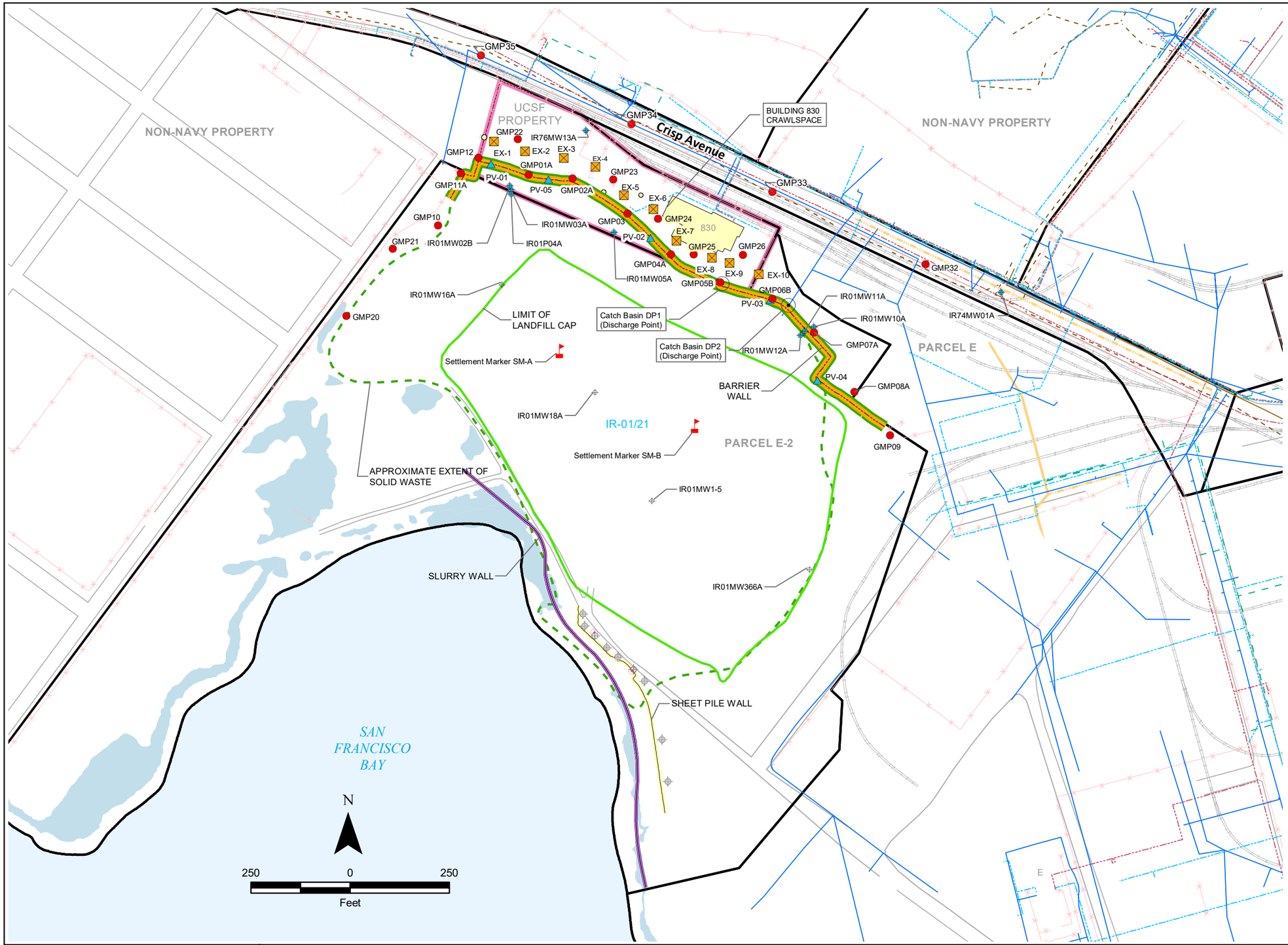
Weather: cool, windy

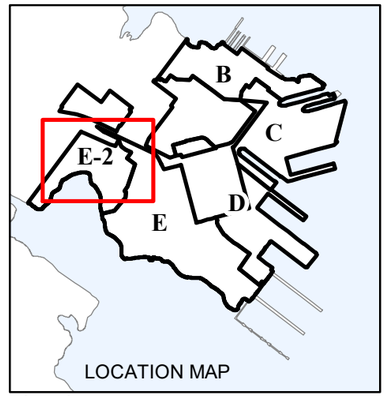
Name: Colin Rowland

Sampling Location						GEM-2000				PID			
Location ID	Description (for example, GMP, Well, Carbon, Hydrosil)	Date	Time	Temp (°F)	Barometric Pressure (in. Hg)	Methane (%)	CO_2 (%)	O_2 (%)	Percent of LEL	Non-Methane VOCs (ppmv)	Bckgrd. NMOCs (ppmv)	Soil Gas Pressure (in. H_20)	Notes (e.g., active extraction, flow rate, probe damage, instrument issues)
GMP08A	Gas Monitoring Probe	11/19/19	742	56	29.63	0.0	8.7	2.7	0.0	0.0	0.0	0.0	
GMP23	Gas Monitoring Probe	11/19/19	756	57	29.63	0.4	15.8	0.2	8.0	0.0	0.0	0.0	
GMP24	Gas Monitoring Probe	11/19/19	752	58	29.63	0.3	14.1	0.0	7.0	0.0	0.0	0.0	

Legend:

%: percent by volume in air
^oF: degrees Fahrenheit
CO_2: carbon dioxide
GEM-2000: CES-LANDTEC landfill gas meter
in. Hg: inches of mercury
in. H_20: inches of water
LEL: lower explosive limit
NA: not applicable
NMOC: non-methane organic compound
O_2: oxygen
PID: photoionization detector
ppmv: parts per million by volume
VOC: volatile organic compound





Legend

- OtherMonitoringWells
- Settlement Marker
- Catch Basin Discharge Points
- *Former Location of Groundwater Extraction System Well/Vault*
- Extraction Well
- GMP
- Monitoring Well with Water Level Measurement
- Passive Vent
- HDPE Barrier Wall and Extraction Trench
- *Grouted Section of HDPE Barrier Wall*
- Surface/Building Air Monitoring Location
- Limit of Landfill Cap
- Approximate Extent of Solid Waste
- Groundwater Extraction System Well/Vault
- Groundwater Extraction System Piezometer
- Sheet Pile Wall
- Storm Water Line
- Water Line
- Saltwater Line
- Steam Line
- Sanitary Sewer Line
- Electric Line
- Gas Line
- Fence Line
- Parcel Boundary
- Wetland (Surveyed in October 2001)
- Road
- Rail Line
- UCSF Property

Methane concentrations are in percent by volume

Notes:

DP	Discharge Point
EW	Groundwater extraction well
EX	Gas extraction well
GMP	Gas monitoring probe
HDPE	High-density polyethylene
IR	Installation Restoration
PV	Passive Vent
UCSF	University of California, San Francisco

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San Francisco, California

FIGURE 1
Site Map and
Landfill Gas Monitoring Locations